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L12: Entry 6 of 7

File: USPT

Apr 17, 1984

US-PAT-NO: 4443569

DOCUMENT-IDENTIFIER: US 4443569 A

TITLE: Process for the production of thermosetting aqueous electrocoating compositions susceptible of being cathodically deposited and the use thereof

DATE-ISSUED: April 17, 1984

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schroder; Manfred	Herdecke			DEX
Subramanyam; Arty R. T.	Wuppertal			DEX

US-CL-CURRENT: 523/414; 204/500, 428/457, 428/460, 523/404, 524/510, 524/512, 524/901

ABSTRACT:

The invention relates to thermosetting, cathodically depositable, aqueous electrocoating compositions which are produced by reacting a nitrogen base-containing binder, which contains tertiary amino groups and primary and/or secondary OH groups, with metal compounds, which are sparingly soluble or insoluble in water, of cobalt, copper, lead, nickel and/or manganese at temperatures between 100.degree. C. and 150.degree. C. under an inert gas. The resultant products are subsequently protonated with an acid and diluted with water in a manner known per se to yield electrocoating paints having a solids content of from 5 to 25% and pH values of 5 to 8. Octoates, naphthenates, borates, and also acetyl acetonates are preferred to be used as the metal compounds which are sparingly soluble or insoluble in water.

15 Claims, 0 Drawing figures Exemplary Claim Number: 1

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ABPL:

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BSPR:

Other publications mainly describe the use in cationic electrocoating compositions of water-insoluble metal compounds which initiate specific reactions. However, while inorganic and organic metal compounds have only been mentioned as known curing catalysts for polyisocyanate-containing binders in the specification of the German OS No. 25 41 234, according to the European Patent Publication No. 00 12 463 water-insoluble salts or complexes of a great variety of metals, especially those of lead, are suitable to be used as transesterification catalysts for curing of the two-components binder systems in a finished paint having mainly been claimed.

DEPR:

For use in all of the four tests, 674 parts of the undiluted Resin A were thoroughly mixed with 300 parts of a phenolic resol having been etherified with allyl alcohol in the phenolic OH groups (Methylon 75108 of General Electric) by means of an impeller at 40.degree. C. for 30 minutes, followed by neutralization to 25% of the amine equivalent with 10% acetic acid and subsequent thorough homogenization together with the pigment paste B by means of the impeller for 1 hour to form a paint concentrate having a pigment/binder ratio of 0.26:1.

DEPR:

The metal-containing binders of resin A, having been modified according to the invention, which binders have been described in the tests 2 through 5 and the results reported in Table 1, were thoroughly homogenized together with the heat-reactive phenolic resin, neutralized to 25% of the amine equivalent, and subsequently again homogenized with the black pigment paste B, as has been described in comparative tests 6 through 9, to form a paint concentrate having a pigment/binder ratio of 0.26:1. The electrocoating compositions 10 through 12, obtained by adjusting the concentrates to solids contents of 16% with distilled water, were tested as described for the comparative tests 6 through 9. The results are also set forth in Table 2.

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L12: Entry 5 of 7

File: USPT

Dec 10, 1985

US-PAT-NO: 4557979

DOCUMENT-IDENTIFIER: US 4557979 A

TITLE: Process for deposition of resin dispersions on metal substrates

DATE-ISSUED: December 10, 1985

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Higginbottom; Harold P.	Wilbraham	MA		
Drumm; Manuel F.	Springfield	MA		

US-CL-CURRENT: 428/460; 204/500, 427/388.3, 427/388.4, 428/457, 524/596

ABSTRACT:

Coating of a resin blend on a metal substrate by electrodeposition wherein the resin blend comprises a poly(3,4-dihydro-3-substituted-1,3-benzoxazine) and a reactive polyamine. The resin blend is dispersed in an aqueous medium containing a protonating acid and is subjected to cathodic electrophoresis to deposit the blend on a metal substrate as an adherent film which is dried and cured by the application of heat. The resin blend cures at relatively low temperatures without evolution of volatile matter.

31 Claims, 0 Drawing figures Exemplary Claim Number: 1